

(12) UK Patent Application (19) GB (11) 2 313 622 (13) A

(43) Date of A Publication 03.12.1997

(21) Application No 9611363.4

(22) Date of Filing 31.05.1996

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(51) INT CL⁶
E05G 1/00

(52) UK CL (Edition O)
E2X X7

(56) Documents Cited

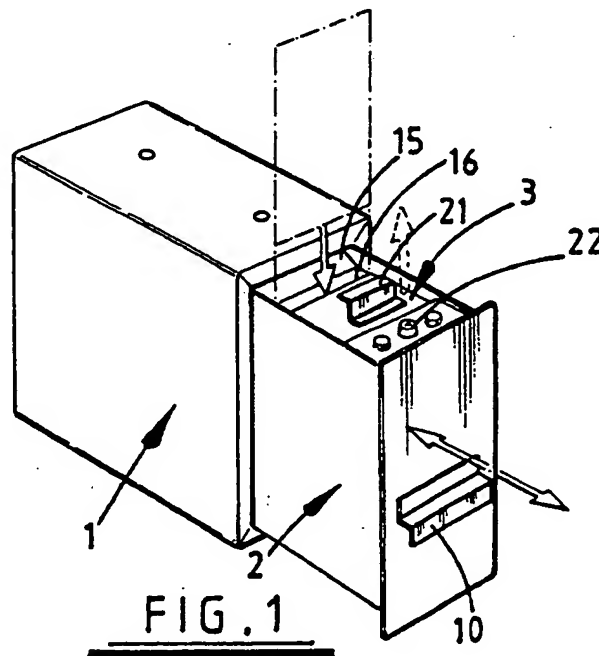
GB 2236143 A GB 2214412 A EP 0124729 A

(58) Field of Search

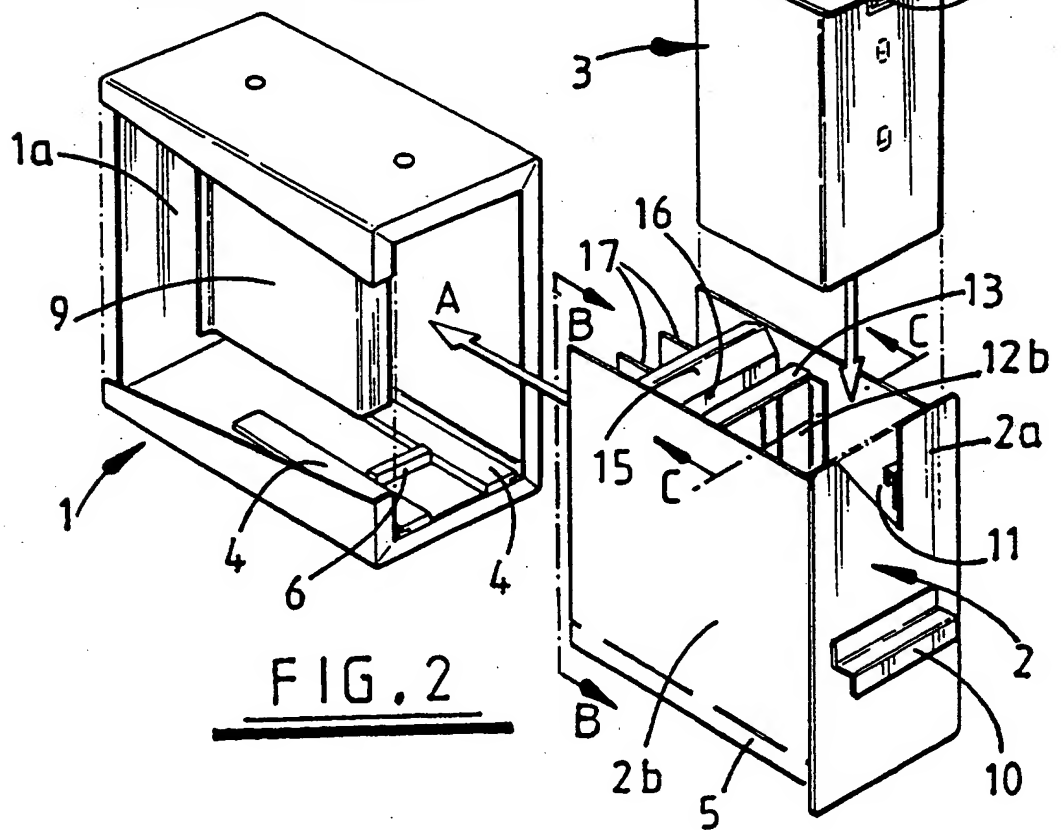
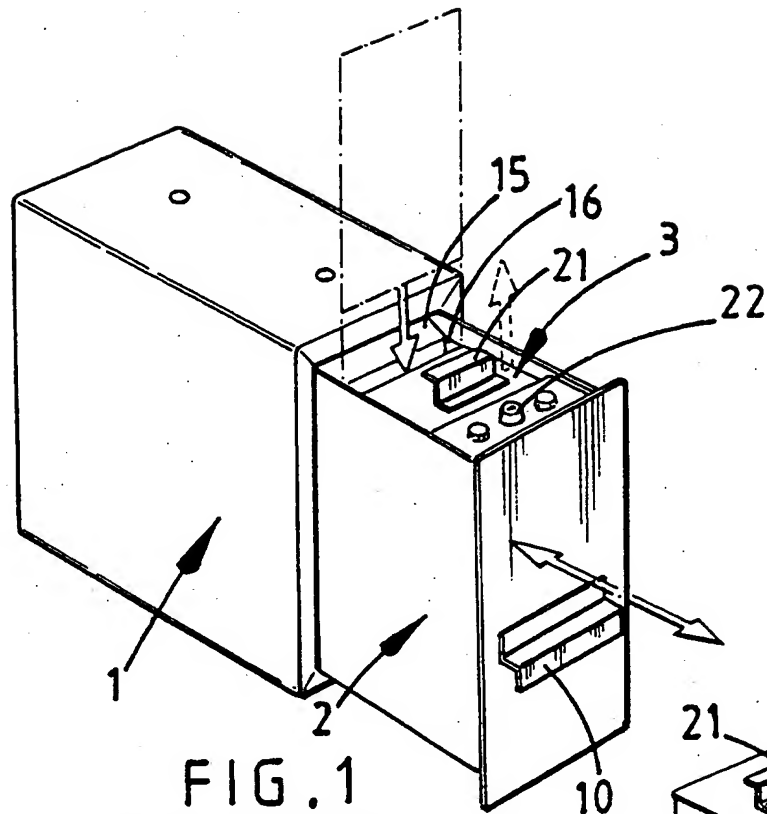
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INT CL⁶ E05G 1/00 1/06 7/00 , G07D 11/00
Online: WPI

(54) A bank note holder

(57) A bank note holder comprises a housing 1, a slidable drawer 2, movable between an open and a closed position, a storage chamber 3 for the bank notes, a slot 15 for receiving bank notes and means of conveying the bank notes from the slot to the chamber actuated by the action of closing the drawer (figures 10a,b,c). Preferably the conveying means comprises a ram for forcing bank notes through an opening in the storage chamber and a spring biased pressure plate for maintaining the position of the notes within the storage chamber.



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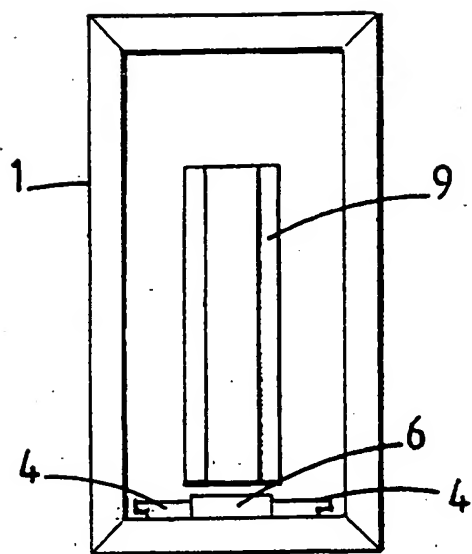


FIG. 3

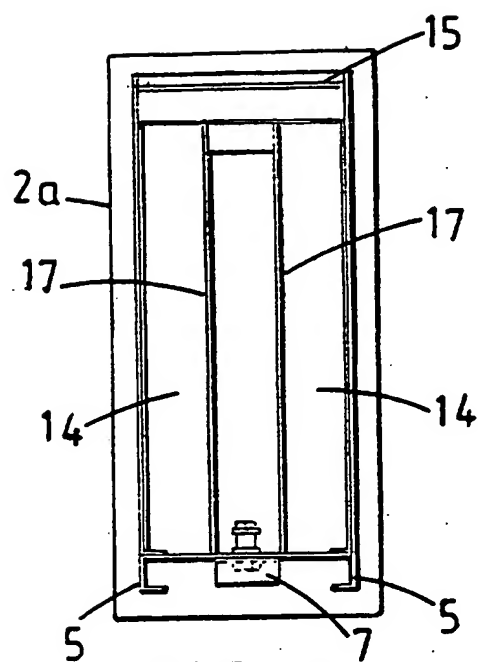


FIG. 6

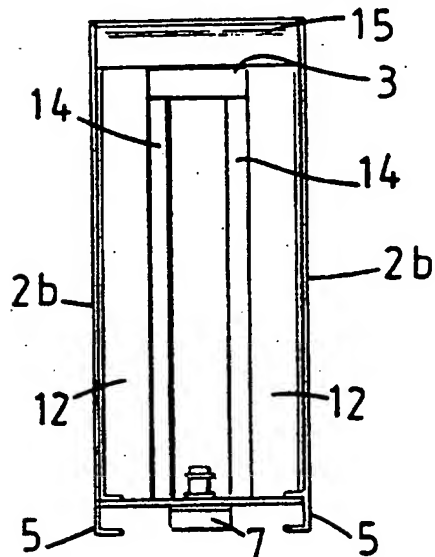


FIG. 7

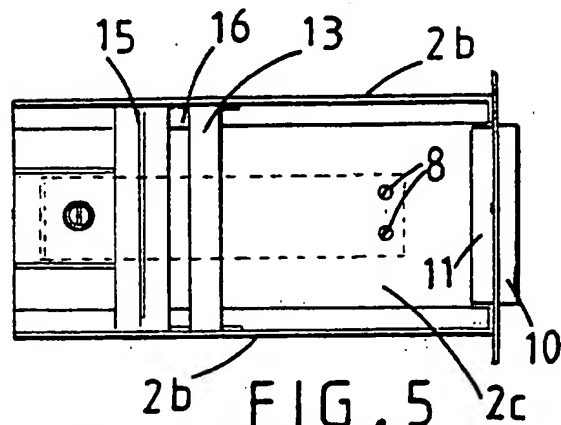


FIG. 5

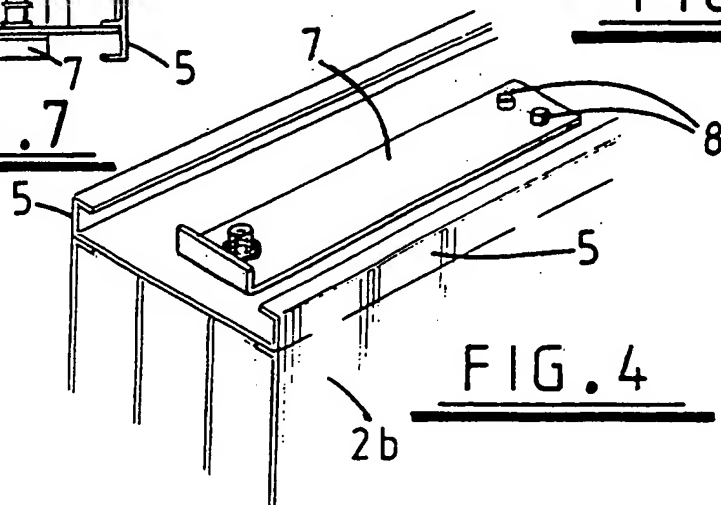


FIG. 4

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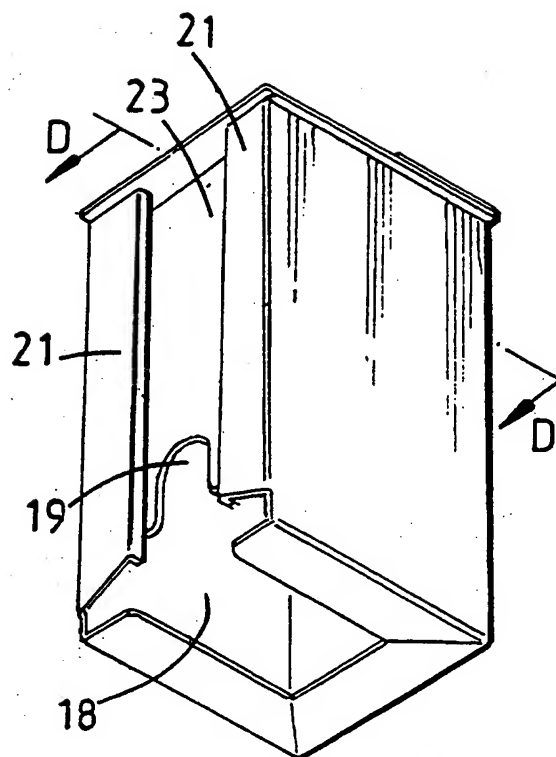


FIG. 8

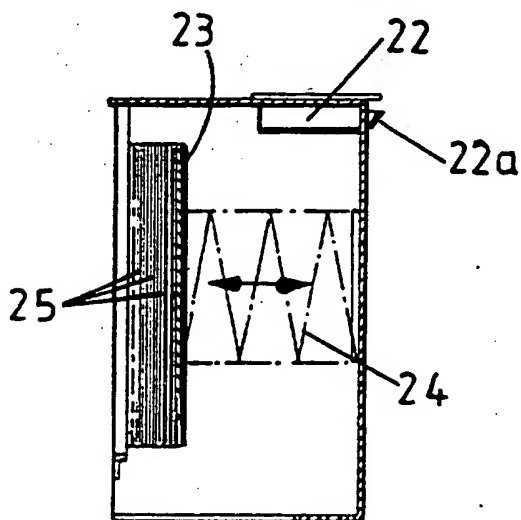
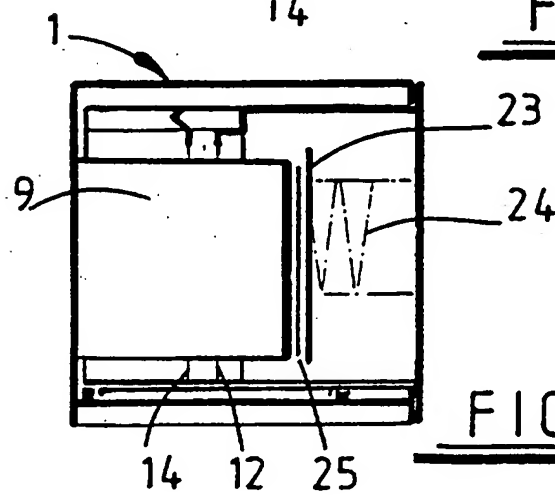
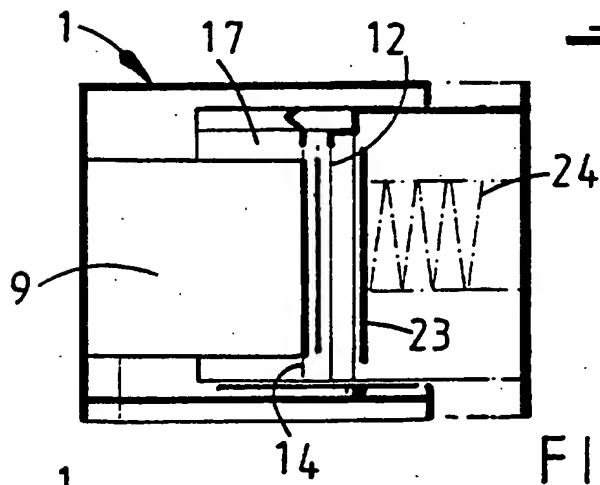
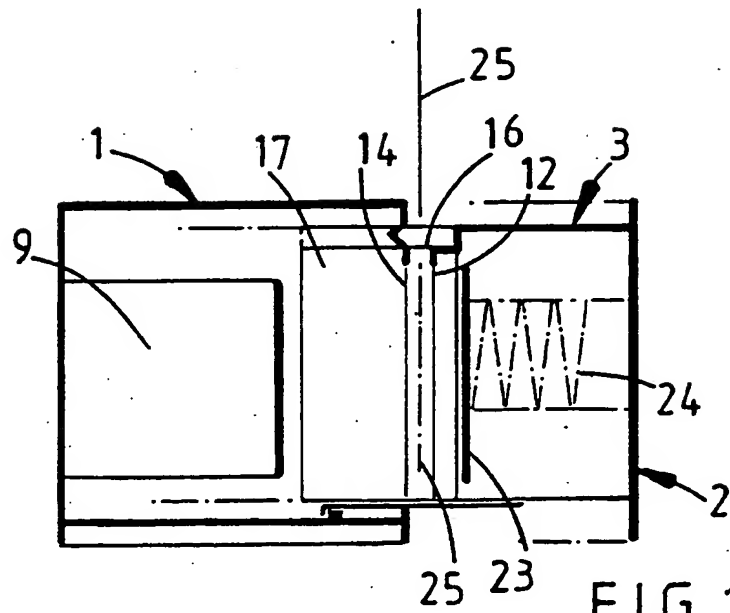


FIG. 9

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A BANK NOTE HOLDER

The present invention relates to a bank note holder. In particular, but not exclusively, the invention provides a secure holder for storing bank notes at locations such as retail sales points and the like.

Theft of money from sales points is becoming an increasingly common crime. Conventional cash tills, which must out of necessity allow ready access to the money they hold, do not offer a sufficiently high level of security against theft. Thus, secure bank note holders, or cash boxes, are now widely used for the secure storage of bank notes at sales points, allowing only a minimal number of bank notes to be kept in the cash till.

Typically, such bank note holders comprise a secure box provided with a slot through which a bank note may be inserted into the box. A simple mechanical mechanism is then operated, for instance by actuation of an appropriate plunger, to convey the bank note to an inner cassette housed within the box. Bank notes can subsequently be removed from the box by removing the entire cassette and replacing it with an empty one. The cash cassette is typically locked into the secure box so it may only be removed by a person holding an appropriate key, who would not generally be the sales person working at the cash point.

Although such known bank note holders work satisfactorily, it is nevertheless desirable to continue to seek to develop improved bank note holders offering a combination of convenient operation and secure bank note storage. Accordingly, it is an object of the present invention to provide such a new bank note holder.

According to the present invention there is provided a bank note holder comprising a housing, a drawer moveable within the housing between open and closed positions, a bank note storage chamber provided within the drawer, an aperture for inserting a bank note into the drawer, the aperture being accessible when the drawer is in an open position, and means for conveying a bank note inserted into said aperture to said storage chamber, wherein said means is actuated by the action of closing the drawer.

Since a bank note is conveyed to the storage chamber simply by the action of closing the drawer, operation of the unit is advantageously straight forward. In addition, by providing the bank note storage chamber within the drawer, there is ready access to the chamber for the removal of bank notes.

The bank note storage chamber is preferably located towards the front of the drawer and said aperture is preferably located towards the back of the drawer when the drawer is in an open position.

In a preferred embodiment of the invention, the bank note storage chamber is provided with an opening facing towards the back of the drawer, and the housing is provided with a protruding portion which extends through said opening and into the chamber when the drawer is closed, whereby a bank note inserted into said aperture when the drawer is open is pushed through said opening and into the chamber by said protruding portion as the drawer is closed.

The bank note storage chamber may be provided with a spring loaded member which acts to bias bank notes towards the back of the chamber and said opening therein, such that bank notes are pushed into the chamber against the spring action, and whereby bank notes are maintained in a compact bundle within the chamber. For instance, the spring loaded member may comprise a plate and a coil spring acting between the plate and a front wall of the bank note storage chamber.

Preferably the bank note storage chamber is a cassette which is separable from the drawer. For security, the cassette may be releasibly lockable within the drawer.

Alternatively, the entire drawer may be removable from the housing (and be lockable therein).

A specific embodiment of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Fig. 1 is a perspective view of a bank note holder in accordance with the present invention, with the drawer shown in an open position;

Fig. 2 is an exploded view of the bank note holder of Fig. 1, with the external casing shown partially cut away to reveal internal detail;

Fig. 3 is a front end view of the housing with drawer removed, looking in the direction of arrow A on Fig. 2;

Fig. 4 is a bottom perspective view of the drawer;

Fig. 5 is a plan view from above of the drawer with the bank note storage cassette removed;

Fig. 6 is an end view of the drawer with the bank note storage cassette removed, looking in the direction of arrow B on Fig. 2;

Fig. 7 is a sectional view of the drawer with the bank note storage cassette removed, taken on the line C-C of Fig. 2;

Fig. 8 is a front perspective view from below of the bank note storage cassette;

Fig. 9 is a sectional view of the bank note storage cassette taken in the line D-D of Fig. 8; and

Figs. 10a to 10b are schematic drawings illustrating the operation of the bank note holder

Referring to Figs. 1 to 9 of the drawings, the main components of the illustrated bank note holder are an outer casing 1, a drawer 2, and a bank note storage cassette 3. The cassette 3 is carried by the drawer 2 which is itself slidably mounted within the casing 1. These three components will now be described separately in more detail.

The casing 1, is a sheet metal box structure which is open at its front end to receive the drawer 2. The internal floor of the casing 1 is provided with two spaced apart guide rails 4 on which the drawer 2 runs by virtue of corresponding runners 5 which extend from its bottom. A transverse abutment 6 extends between the guide rails 4 towards the front of the casing 1. The abutment 6 inter-engages with a catch member 7 which is secured to the bottom of the drawer 2. (The catch member 7 is bolted to the floor of the drawer 2 by bolts 8 which are only accessible from within the drawer 2 when the cassette 3 is removed). A generally rectangular ram member 9 extends from the rear wall 1a of the casing 1, towards its front open end. The ram 9 engages and co-operates with the drawer 2 and cassette 3 in a manner described below.

Turning now to the drawer 2, this comprises a face plate 2a, side walls 2b and a floor 2c. The runners 5 extend along the bottom edges of the floor 2c, and the catch member 7 is bolted to the floor 2c. A handle 10 is provided on the external surface of the face plate 2a, and a catch 11 (which co-operates with a lock 22 on the cassette 3 as described below) is provided on its internal surface. Further details of the drawer are now described with particular reference to Figs. 5-7.

A pair of transverse partition walls 12 extend towards each other from each of the drawers side walls 2b, but do not meet each other so that a vertical gap is left there between. The tops of each of the partition walls 12 are joined by a cross member 13 which itself extends between the drawers side walls 2b. The resulting compartment defined between the partition walls 12 and the face plate 2a of the drawer 2 is dimensioned to receive the cassette 3.

The drawer 2 is also provided with a second pair of transverse partition walls 14 which extend towards one another, but leaving a gap there between, from a location slightly further towards the back of the drawer 2 than the partition walls 12 (the gap between the walls 14 being slightly narrower than the gap between the walls 12 but aligning therewith). A cross member 15 extends between the drawer side walls 2b across the top of the partition walls 14. The arrangement is such that a slot 16 is defined between the cross members 13 and 15 and the side walls 12 and 14.

A pair of guide walls 17 extend towards the back of the drawer 2 from either side of the gap between the side walls 14. The function of the guide walls 17 will become clear from the following description.

Details of the cassette 3 are best seen from Figs. 2, 8 and 9. The cassette 3 is generally a box structure with an opening 18 in its floor and a vertical opening 19 in its front wall 20. The cassette is configured to be a snug fit within the drawer 2 in the compartment defined between the partition walls 12 and the front plate 2a such that the opening 19 aligns with the gaps between the partition walls 12 and 14. The cassette 3 has a handle 21 on its upper wall by way of which it can be dropped into, and pulled out of, the drawer 2. The cassette 3 is provided with a lock 22 so that it

may be locked into the drawer 2, the latch 22a of the lock 22 engaging the catch 11 provided on the drawer 2.

A pressure plate 23 is mounted within the cassette 3 by way of a coil spring 24. The plate 23 lies generally parallel to the front and rear walls of the cassette 3 and the coil spring is fixed at one end to the plate 23 and at the other end to the inner surface of the front wall of the cassette 3. The function of the pressure plate 23 may be appreciated from Fig. 9 which is a cross section of the cassette 3 showing a number of bank notes 25 which have been collected therein. It will thus be seen that the spring pressure plate 23 serves to press bank notes towards the front wall 21 of the cassette 3 ensuring that within the cassette 3 bank notes are maintained in a compact bundle.

Operation of the bank note holder will now be explained, with particular reference to Figs. 10a to 10c which schematically illustrate the process of inserting a bank note into the holder.

The casing 1 may be secured to the underside of a counter or desk-top etc. (by inserting bolts or screws up through the top of the casing 1 and into the counter) so that the front of the holder lies generally flush with the front of the counter. As mentioned above, the drawer 2 slides within the casing 1 but removal of the drawer 2 is prevented by the catch member 7 which engages the abutment 6 provided on the floor of the casing 1. Access to the bolts 8 which secure the catch member 7 to the drawer 2 is concealed when a cassette 3 is positioned in the drawer 2. Since the drawer 2 must be removed from the casing 1 to access fixing bolts which secure the casing 1 to the counter, and since the drawer 2 cannot be removed without first removing the cassette 3 to gain access to the bolts 8, it can be seen that once a cassette 3 is locked into the drawer 2 there is a high level of security.

In use, to insert a bank note into the holder the drawer 2 is first opened to reveal the slot 16 into which a bank note 25 may then be inserted. The bank note will initially be supported upright between the partition walls 12 and 14 of the drawer 2. This is illustrated by the chain dot line in Fig. 10a.

Referring to Fig. 10b (which shows the drawer half-closed), as the drawer 2 is closed the ram 9 which extends from the back wall 1a of the casing 1 passes between the drawer guide walls 17, through the gap between the partition wall 12 and bears against the bank note 25. As the drawer is closed further, the ram 9 pushes the bank note through the gap between the partition walls 12 and through the opening 19 into the cassette 3, against the spring action of the pressure plate 23. The position with the drawer fully closed is shown in Fig. 3c.

When the drawer is next opened, the ram 9 will withdraw from the cassette 3 but the previously inserted bank note 25 will be held within the cassette 3 between the plate 23 (or any other bank notes previously inserted) and the wall 21 of the cassette 3, as is illustrated by Fig. 9.

The process may be repeated over and over again until the cassette 3 will take no more bank notes, at which point the drawer 2 will not close fully. The cassette 3 can then be unlocked from the drawer 2 and replaced with another empty cassette 3. The opening 18 in the bottom of the cassette 3 provides easy access to empty the full cassette.

It will thus be seen that the present invention provides a bank note holder which is simple to install and use but which offers a high degree of security. Not only is it a simple procedure to deposit notes in the holder, but it is also a simple procedure to empty notes from the holder since the cassette 3 is readily accessed simply by opening the drawer 2.

When not in use, and the drawer is closed, the entire unit may lie flush with the counter so that it does not cause an obstruction.

In addition, it will be appreciated that the narrow slot 16 restricts access to notes within the cassette 3 so that it is extremely difficult to pull notes out of the cassette 3 (whilst it is still in the drawer 2) using tweezers or the like inserted through the slot 16. Furthermore, because the cassette 3 is positioned at the front of the drawer 2 it will be necessary to approach the notes from the back of the drawer 2, and as such access would be extremely restricted by the counter etc. to which the holder is

secured. The cross member 15 is also profiled to make it extremely difficult to gain access to notes within the cassette 3 via the slot 16.

It will be appreciated that many of the details of the above described bank note holder could be modified. For instance, the separable bank note cassette 3 could be replaced by a simple compartment within the drawer which is accessed by, for example, a lockable hinge lid to allow notes to be removed from the drawer 2. Similarly, the entire drawer could be removable from the casing. The cassette arrangement is, however, preferred as it would enable rapid emptying of the drawer since the full cassette can simply be removed and replaced with an empty cassette, cash from the full cassette then being retrieved from the cassette subsequently.

In another possible modification, the partition walls 12 and 14, and cross members 13 and 15, which define the slot 16 in to which a bank note is inserted, could be replaced by appropriate modifications to the front of the removable cassette.

The manner in which bank notes are pushed into the cassette as the drawer is closed could also be modified. That is, alternative arrangements could be provided to convey a bank note into the cassette (or other cash storage compartment) on closing the drawer 2.

Although the bank note holder described above is particularly adapted to provide secure storage of bank notes at retail points etc., it is not limited to such uses. Indeed, the bank note holder could have uses in applications where security is not a problem, in which case it may not, for instance, be necessary to lock the cassette 3 in to the drawer 2. In other words, the holder provides a convenient means for storing bank notes which may have wider application than to provide security at retail sales points etc.

Other possible modifications to the bank note holder described above will be apparent to the appropriate skilled person.

CLAIMS

1. A bank note holder comprising a housing, a drawer moveable within the housing between open and closed positions, a bank note storage chamber provided within the drawer, an aperture for inserting a bank note into the drawer, the aperture being accessible when the drawer is in an open position, and means for conveying a bank note inserted into said aperture to said storage chamber, wherein said means is actuated by the action of closing the drawer.
2. A bank note holder according to claim 1, wherein the bank note storage chamber is located towards the front of the drawer and said aperture is located towards the back of the drawer when the drawer is in an open position.
3. A bank note holder according to claim 2, wherein the bank note storage chamber is provided with an opening facing towards the back of the drawer, and the housing is provided with a protruding portion which extends through said opening and into the chamber when the drawer is closed, whereby a bank note inserted into said aperture when the drawer is open is pushed through said opening and into the chamber by said protruding portion as the drawer is closed.
4. A bank note holder according to claim 3, wherein the bank note storage chamber is provided with a spring loaded member which acts to bias bank notes towards the back of the chamber and said opening therein, such that bank notes are pushed into the chamber against the spring action, and whereby bank notes are maintained in a compact bundle within the chamber by the action of the spring loaded member.
5. A bank note holder according to claim 4, wherein the spring loaded member comprises a plate and a coil spring acting between the plate and a front wall of the bank note storage chamber.

6. A bank note holder according to claim 4 or claim 5, wherein the opening to the bank note storage chamber is a generally vertical slot and said protruding portion of the housing is configured to substantially correspond to the size of the slot.
7. A bank note holder according to any preceding claim, wherein the bank note storage chamber is a cassette which is separable from the drawer.
8. A bank note holder according to claim 7, wherein the cassette is releasibly lockable within the drawer.
9. A bank note holder according to any preceding claim, wherein said aperture is a slot which extends across the width of the drawer.
10. A bank note holder according to any preceding claim, wherein said aperture defined by the drawer.
11. A bank note holder, substantially as hereinbefore described, with reference to the accompanying drawings.



Application No: GB 9611363.4
Claims searched: 1-11

Examiner: David Glover
Date of search: 8 July 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK CI (Ed.O): E2X (X5, X7)

Int CI (Ed.6): E05G 1/00, 1/06, 7/00; G07D 11/00

Other: Online:WPI

Documents considered to be relevant:

| Category | Identity of document and relevant passage | Relevant to claims |
|----------|---|--------------------|
| A | GB 2236143 A (TODD) | |
| A | GB 2214412 A (TENERET LIMITED) | |
| A | EP 0124729 (INTERNATIONAL BUSINESS) | |

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